

Micromann AR Series

Universal, electrically-isolated, signal converters with auxiliary power and alarm monitoring

The Micromann AR Series of signal converters feature an alarm function. In the sector of process automation, it offers both an analogue output and a flexible multi-functional interface between the industrial facility and the control room.

D

Appropriate modules are available for a wide variety of input parameters. This includes signal processing for analogue signals such as current, voltage; temperature (thermocouple and PT100 temperature probes), frequency, conductivity, curve linearisation, and additional math functions.

All Micromann AR Series modules are equipped with a four-digit scalable LED display. Scaling for the input parameters is automatically accomplished. The user friendly software makes setting up operating parameters very easy. The user simply chooses the specific parameters using the keyboard and display.

The Micromann AR Series signal converters are equipped to 2 kV complete electrical isolation.

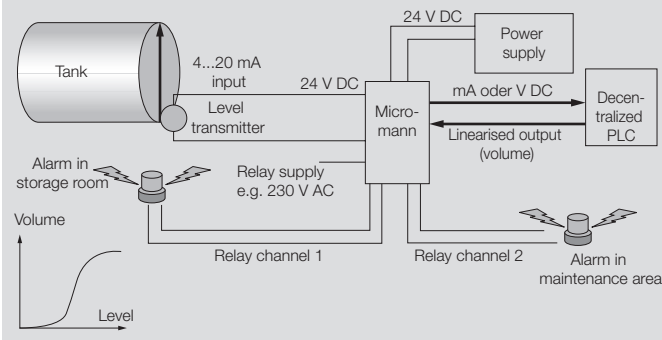
The modules can be mounted on TS35 and TS32 rails.

The pluggable screw connection is located on the front.

Technical features:

- Programmable current/voltage output
- Two alarm outputs with relay LED status display
- LED display in engineering units
- Complete electrical isolation
- DC power supply
- Pluggable screw-connections
- Compact metal housing

Typical application of Micromann CLCAR



Common technical data

Display	
Type	4-digit display
Display	Percent or real-value displayed
Display range	-999 to 9999
Status indicator	Trip1 / Trip2 / Processor status
Analogue Output	
Type	Adjustable voltage/current
Load resistance, current	≤ 900 Ω
Load resistance, voltage	≥ 1 k Ω
Output current limits	0...22 mA
Output voltage limits	0...11 V
Min. input span	2 mA or 1 V
Transmit function	Direct or reverse influence
Isolation voltage	2 kV between the ports
Residual ripple	< 20 mV _{ss} (voltage) < 40 μA _{ss} (current)
Alarm output	
Type	Two NO contacts with arc suppression
Switching current	1 A @ 240 V AC / 30 V DC
Isolation	2 kV between ports
Switching threshold	25 % of the display range
Alarm function	High alarm or low alarm
Relay controlled	Un-energized or energized
Reset	Automatic or manual
Dynamic hysteresis	0...4200 s
General data	
Scanning rate	5 per sec.
EMC standard	DIN EN 61326
Approvals	CE, cULus
Impulse withstand voltage	4 kV (1.2/50 μs)

Connections

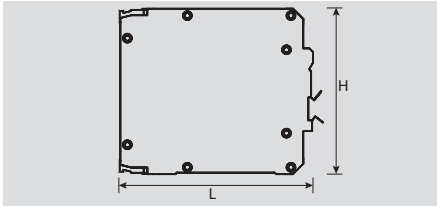
Terminal	Signal	
1	Depending on the individual module	Inputs
2		
3		
4		
5		
6		
7	Connections for changing setup	Configuration
8		
9	0 V	Supply voltage
10	24 V	
11	NO contact, channel 1	Alarm outputs
12	NO contact, channel 2	
13	Common	
14	Output signal +	Analogue outputs
15	Current output signal –	
16	Voltage output signal –	
Housing	PE connection direct on housing	

MANN SERIES - Signal converters

Micromann AR Series

Universal, galvanically-isolated signal converters with an alarm function

- External power supply
- Pluggable connection terminals
- Compact enclosure

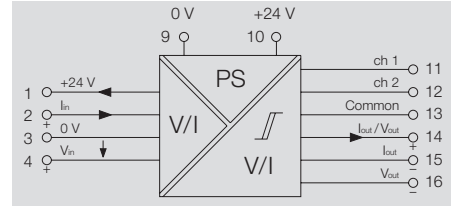


UCVAR

Current und voltage input



- Conversion, isolation and filtering of signals
- Supply of active input devices
- Bi-polar inputs
- Linearization



D

Technical data

Input	
Type	
Input signal	
Input resistance	
Resolution	
Linearisation	
Supply voltage	
Smallest received measuring span	
Display	
Display range	
Display value	
Resolution	
General data	
Voltage supply	
Power consumption	
Accuracy	
Linearity	
Repeat accuracy	
Humidity	
Temperature coefficient	
Long-term drift	
Step response time	
Insulation voltage	
Impulse withstand voltage	
Rated voltage	
Data backup	
Operating temperature/Storage temperature	
EMC standards	
Approvals	
Data of Housing	
Clamping range (rating- / min. / max.)	mm ²
Type of connection / Terminal rail	
Type of Housing / Weight	
Length x width x height	mm
Note	

Analog current / voltage signals
-55...+55 mA / -55...55 V
22 Ω (current input); 1 Ω (voltage input)
1 μA/ mV per bit for small ranges
Linear or √
24 V DC (up to 25 mA)
1 mA or 1 V
-999...9999
Percentage or real value display
0.001 of displayed value
12...50 V DC
6 W @ 24 V DC
< ± 0.1 % typically
< ± 0.1 % typically
± 0.05 % of signal range
0 to 90 % (no condensation)
≤ 0.02 % / °C
0.1 % / 10,000 h
320 ms (for signal jump of 10...90 %), programmable (250 ms...32 sec.)
2 kV input / output / power supply
4 kV (1.2/50 μs)
300 V _{eff}
≥ 100 years
0 °C...+60 °C/-25°C...+70°C
DIN EN 61326
CE; cULus
1.5 / 0.5 / 2.5
Screw connection / TS 35 + TS 32
Anodized aluminium enclosure / 500 g
120 x 46 x 97
PE connection direct on enclosure

Connections

Terminal	Signal
1	24 V DC
2	Signal + Current
3	Signal -
4	Signal + Voltage
5	Not used
6	

Ordering data

Type	
Current input / voltage input	
Special adjustment	
Note	

Type	Qty.	Order No.
UCVAR	1	7940010195
UCV Variabel	1	8945090000
Note		
Additional input and output versions available on request		

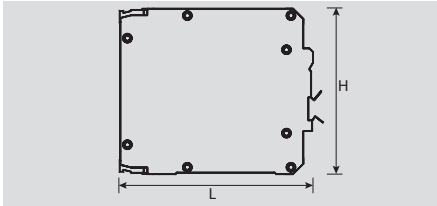
Accessories

Note

Micromann AR Series

Universal, galvanically-isolated signal converters with an alarm function

- External power supply
- Pluggable connection terminals
- Compact enclosure



Technical data

Input	
Type	Thermocouple (type J,K,T,E,B,S,R) or mV signals
Input signal	9 adjustable ranges
Input resistance, max.	1 kΩ
Display	
Display range	Depends on input type
Display value	°C / °F or V
Resolution	1 °C / °F or 0.01 mV
General data	
Cold-junction compensation error	≤ 0.02 / C° ambient temperature
Voltage supply	12...50 V DC
Power consumption	6 W @ 24 V DC
Humidity	0 to 90 % (no condensation)
Temperature coefficient	≤ 0.02 % / °C
Long-term drift	0.1 % / 10,000 h
Step response time	320 ms (for signal jump of 10...90 %), programmable (250 ms...32 sec.)
Insulation voltage	2 kV input / output / power supply
Impulse withstand voltage	4 kV (1.2/50 μs)
Rated voltage	300 V _{eff}
Data backup	≥ 100 years
Operating temperature/Storage temperature	0 °C...+60 °C/-25°C...+70°C
EMC standards	DIN EN 61326
Approvals	CE; cULus

Data of Housing	
Clamping range (rating- / min. / max.)	mm² 1.5 / 0.5 / 2.5
Type of connection / Terminal rail	Screw connection / TS 35 + TS 32
Type of Housing / Weight	Anodized aluminium enclosure / 500 g
Length x width x height	mm 120 x 46 x 97

Note PE connection direct on enclosure

Ordering data

Type	Temperature converter
	Special adjustment

Note Additional input and output versions available on request

Accessories

Note

UTCAR

Temperature input / thermocouple



- Thermocouple (J, K, T, E, B, S, R)
- Temperature display in °C / °F
- Burn-out alarm
- Cold-trap compensation

Input	
Type	Thermocouple (type J,K,T,E,B,S,R) or mV signals
Input signal	9 adjustable ranges
Input resistance, max.	1 kΩ
Display	
Display range	Depends on input type
Display value	°C / °F or V
Resolution	1 °C / °F or 0.01 mV
General data	
Cold-junction compensation error	≤ 0.02 / C° ambient temperature
Voltage supply	12...50 V DC
Power consumption	6 W @ 24 V DC
Humidity	0 to 90 % (no condensation)
Temperature coefficient	≤ 0.02 % / °C
Long-term drift	0.1 % / 10,000 h
Step response time	320 ms (for signal jump of 10...90 %), programmable (250 ms...32 sec.)
Insulation voltage	2 kV input / output / power supply
Impulse withstand voltage	4 kV (1.2/50 μs)
Rated voltage	300 V _{eff}
Data backup	≥ 100 years
Operating temperature/Storage temperature	0 °C...+60 °C/-25°C...+70°C
EMC standards	DIN EN 61326
Approvals	CE; cULus

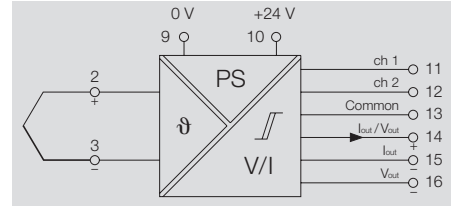
Data of Housing	
Clamping range (rating- / min. / max.)	mm² 1.5 / 0.5 / 2.5
Type of connection / Terminal rail	Screw connection / TS 35 + TS 32
Type of Housing / Weight	Anodized aluminium enclosure / 500 g
Length x width x height	mm 120 x 46 x 97

Note PE connection direct on enclosure

Type	Qty.	Order No.
UTCAR	1	7940012190
UTC Variabel	1	8945130000

Note Additional input and output versions available on request

Note



Connections

Terminal	Signal	Signal temperature
1		Cold-junction compensation
2	Signal + mV	
3	Signal - mV	
4		
5		
6	Not used	

Thermocouple (Type J, K, N, T, E, B, S, R) or mV signals

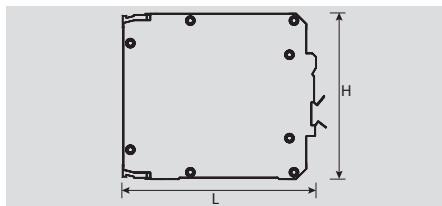
Input type	Display limits	
	highest	lowest
J	870 °C (1598 °F)	-50 °C (-58 °F)
K	1372 °C (2502 °F)	
N	1300 °C (2372 °F)	
T	400 °C (752 °F)	
E	700 °C (1292 °F)	
B	1800 °C (3272 °F)	0 °C (32 °F)
S	1768 °C (3214 °F)	-50 °C (-58 °F)
R	1768 °C (3214 °F)	-50 °C (-58 °F)
mV	60 mV	-9.99 m

MANN SERIES - Signal converters

Micromann AR Series

Universal, galvanically-isolated signal converters with an alarm function

- External power supply
- Pluggable connection terminals
- Compact enclosure

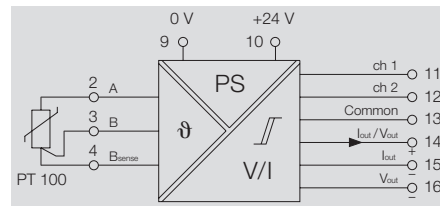


UR TAR

Temperature input (RTD)



- Processes 2- or 3-wire PT100 signals
- Temperature display in °C / °F
- Automatic line compensation



Connections

Terminal	Signal
1	Not used
2	A
3	B
4	B-Sense
5	Not used
6	

2- or 3-wire PT100 RTD (BS1904:1984 / IEC751:1983)

Max. display range		Resolution
highest	lowest	
700 °C	-200 °C	1 °C
1292 °F	-328 °F	1 °F
200,0 °C	-99,9 °C	0.1 °C
400 °F	-99,9 °F	0.1 °F

Technical data

Input	
Type	2-/3-wire PT100 RTD
Input signal	Configurable for 4 ranges
Line resistance in measuring circuit	30 Ω
cable-length compensation	> 0,05 %
Display	
Display range	Depends on selected range
Display value	°C or °F
Resolution	1 °C / °F or 0.1 °C / °F
General data	
Voltage supply	12...50 V DC
Power consumption	6 W @ 24 V DC
Accuracy	< 1 °C for 1 °C resolution
Repeat accuracy	± 0.05 % of signal range
Humidity	0 to 90 % (no condensation)
Temperature coefficient	≤ 0.02 % / °C
Long-term drift	0.1 % / 10,000 h
Step response time	320 ms (for signal jump of 10...90 %), programmable (250 ms...32 sec.)
Insulation voltage	2 kV input / output / power supply
Impulse withstand voltage	4 kV (1.2/50 μs)
Rated voltage	300 V _{eff}
Data backup	≥ 100 years
Operating temperature/Storage temperature	0 °C...+60 °C/-25°C...+70°C
EMC standards	DIN EN 61326
Approvals	CE; cULus

Data of Housing	
Clamping range (rating- / min. / max.)	mm² 1.5 / 0.5 / 2.5
Type of connection / Terminal rail	Screw connection / TS 35 + TS 32
Type of Housing / Weight	Anodized aluminium enclosure / 500 g
Length x width x height	mm 120 x 46 x 97
Note	
PE connection direct on enclosure	

Ordering data

Type	Temperature converter	Special adjustment
UR TAR		
URT Variabel		
Note		
Additional input and output versions available on request		

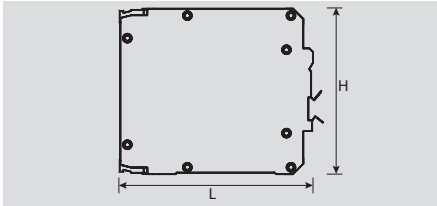
Accessories

Note

Micromann AR Series

Universal, galvanically-isolated signal converters with an alarm function

- External power supply
- Pluggable connection terminals
- Compact enclosure

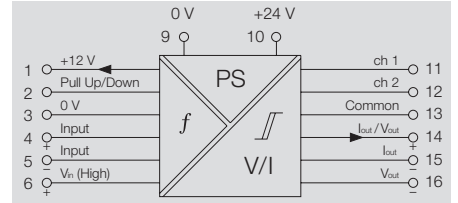


UHZAR

Frequency input



- Wide-range input
- Supply of active input devices



Technical data

Input

Type
Input signal
Input voltage
Smallest received measuring span
Sensor supply

Display

Display range	-999...9999
Display value	Percentage or real value display
Resolution	0.001 of displayed value

General data

Voltage supply	12...50 V DC
Power consumption	6 W @ 24 V DC
Accuracy	< 0.05 % of signal range
Linearity	< 0.05 % of signal range
Repeat accuracy	± 0.02 % of signal range
Humidity	0 to 90 % (no condensation)
Temperature coefficient	≤ 0.02 % / °C
Long-term drift	0.1 % / 10,000 h
Step response time	320 ms (for signal jump of 10...90 %), programmable (250 ms...32 sec.)
Insulation voltage	2 kV input / output / power supply
Impulse withstand voltage	4 kV (1.2/50 µs)
Rated voltage	300 V _{eff}
Data backup	≥ 100 years
Operating temperature/Storage temperature	0 °C...+60 °C/-25°C...+70°C
EMC standards	DIN EN 61326
Approvals	CE; cULus

Data of Housing

Clamping range (rating- / min. / max.)	mm ²	1.5 / 0.5 / 2.5
Type of connection / Terminal rail		Screw connection / TS 35 + TS 32
Type of Housing / Weight		Anodized aluminium enclosure / 500 g
Length x width x height	mm	120 x 46 x 97

Note

PE connection direct on enclosure

Ordering data

Type
Frequency converter
Special adjustment

Type	Qty.	Order No.
UHZAR	1	7940010184
UHZ Variabel	1	8945100000

Note

Additional input and output versions available on request

Accessories

Note

Connections

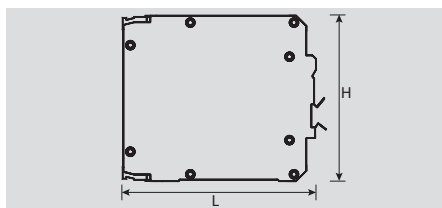
Terminal	Signal
1	12 V DC
2	Pull Up / Down
3	0 V
4	Signal +
5	Signal -
6	High Signal

MANN SERIES - Signal converters

Micromann AR Series

Universal, galvanically-isolated signal converters with an alarm function

- External power supply
- Pluggable connection terminals
- Compact enclosure

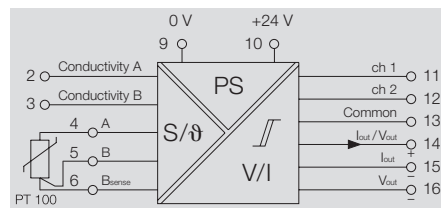


CNDAR

Conductivity measurement



- Suitable for all conductivity probes
- Automatic measuring range selection
- Compensation for probe temperature
- Programmable cell constant
- Linearized probe characteristic



D

Technical data

Input	
Type	Conductivity, PT100 RTD
Input signal	0 to 200 μ S (0.1 μ S resolution) 0 to 1000 / 5000 μ S (1 μ S resolution) 0 to 20 mS (0.01 mS resolution) 0 to 200 $^{\circ}$ C (0.1 $^{\circ}$ C resolution) 20 % of selected input range
Smallest received measuring span	< 6 V_{SS} @ 400 Hz
Supply voltage	0.01...99.99 / cm
Battery constant	< 2 % (up to 30 Ω)
cable-length compensation	Linear or user-defined, up to five measurement points
Temperature compensation	
Display	
Display range	-999...9999
Display value	μ S, mS, μ S/cm, mS/cm or $^{\circ}$ C
Resolution	see input signal
General data	
Voltage supply	12...50 V DC
Power consumption	6 W @ 24 V DC
Accuracy	\pm 0.05% of final value
Linearity	\pm 0.05 % of signal range
Repeat accuracy	\pm 0.05 % of signal range
Humidity	0 to 90 % (no condensation)
Temperature coefficient	\leq 0.02 % / $^{\circ}$ C
Long-term drift	0.1 % / 10,000 h
Step response time	320 ms (for signal jump of 10...90 %), programmable (250 ms...32 sec.)
Insulation voltage	2 kV input / output / power supply
Impulse withstand voltage	4 kV (1.2/50 μ s)
Rated voltage	300 V_{eff}
Data backup	\geq 100 years
Operating temperature/Storage temperature	0 $^{\circ}$ C...+60 $^{\circ}$ C/-25 $^{\circ}$ C...+70 $^{\circ}$ C
EMC standards	DIN EN 61326
Data of Housing	
Clamping range (rating- / min. / max.)	1.5 / 0.5 / 2.5 mm ²
Type of connection / Terminal rail	Screw connection / TS 35 + TS 32
Type of Housing / Weight	Anodized aluminium enclosure / 500 g
Length x width x height	120 x 46 x 97 mm
Note	
	PE connection direct on enclosure

Connections

Terminal	Signal
1	Not used
2	A Conductivity
3	B Conductivity
4	A Temperature
5	B Temperature
6	B-Sense Temperature

Ordering data

Type	
	Voltage/current output
	Special adjustment
Note	
	Additional input and output versions available on request

Type	Qty.	Order No.
CNDAR	1	7940010232
CND Variabel	1	8944930000
Note		
		Additional input and output versions available on request

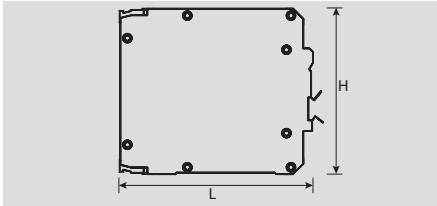
Accessories

Note

Micromann AR Series

Universal, galvanically-isolated signal converters with an alarm function

- External power supply
- Pluggable connection terminals
- Compact enclosure



Technical data

Input	
Type	
Input signal	
Input resistance	
Smallest received measuring span	
Sensor supply	
Display	
Display range	
Display value	
Resolution	
General data	
Voltage supply	
Power consumption	
Linearity	
Humidity	
Temperature coefficient	
Long-term drift	
Step response time	
Insulation voltage	
Impulse withstand voltage	
Rated voltage	
Data backup	
Operating temperature/Storage temperature	
EMC standards	
Approvals	

Data of Housing	
Clamping range (rating- / min. / max.)	mm ²
Type of connection / Terminal rail	
Type of Housing / Weight	
Length x width x height	mm

Note

Ordering data

Type	
Voltage/current output	
Special adjustment	

Note

Accessories

Note

CLCAR

Linearization



- Linearized measurements of non-linear sensors
- Processing of control signals

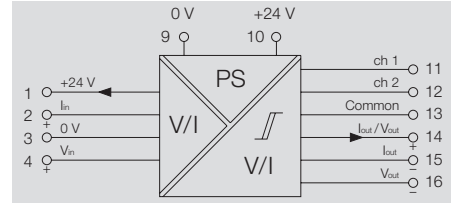
Analog current / voltage signals	
-24...24 mA / -12...12 V	
22 Ω (current input); or 1 MΩ (voltage input)	
2 mA or 1 V	
24 V DC (up to 25 mA)	
-999...9999	
Percentage or real value display	
0.001 of displayed value	
12...50 V DC	
6 W @ 24 V DC	
101 adjustable measurement points, universal signal	
0 to 90 % (no condensation)	
≤ 0.02 % / °C	
0.1 % / 10,000 h	
320 ms (for signal jump of 10...90 %), programmable (250 ms...32 sec.)	
2 kV input / output / power supply	
4 kV (1.2/50 μs)	
300 V _{eff}	
≥ 100 years	
0 °C...+60 °C/-25°C...+70°C	
DIN EN 61326	
CE; cULus	

1.5 / 0.5 / 2.5	
Screw connection / TS 35 + TS 32	
Anodized aluminium enclosure / 500 g	
120 x 46 x 97	

PE connection direct on enclosure

Type	Qty.	Order No.
CLCAR	1	7940010489
CLC Variabel	1	8944980000

Additional input and output versions available on request



Connections

Terminal	Signal
1	24 V DC
2	Signal + Current
3	Signal -
4	Signal + Voltage
5	Not used
6	